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**AUTOMATIC 15 & 25 mm FLEXIPOINTS
& «U» SHAPED STAPLES MACHINE**



Technical and User Manual

Version 2 : 04/ 2004

FB 5021

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INTRODUCTION

You have just acquired an FB 5021. Congratulations on your sensible choice and thank you for having confidence in us. The FB 5021 benefits from the experience in automated machines for which Cassese is famous. The FB 5021 enables automatic insertion of flexipoints, for non-permanent fitting of the frame backboard.

ACCESSORIES SUPPLIED WITH THE MACHINE

- 1 quick-release connector (**fitted on the machine**) / 1 standard hose connector / 1 USA connector / 1 quick-release connector
- 1 wrench 10/12 mm
- 1 Allen key 3 mm
- 1 Allen key 5 mm
- 2 cones Z9756
- 2 joints Z2263

SPECIFICATIONS

FRAME DIMENSIONS

MINIMUM:	10 cm / 13 cm (inside dimensions) with a MIN. moulding width of 10 mm
MAXIMUM:	60 cm / 140 cm (inside dimensions) with a MAX. moulding width of 50 mm
MOULDING HEIGHT:	min. 12 mm / max. 50 mm
REBATE HEIGHT:	min. <u>with</u> frame backboard: 2 mm
ELECTRIC POWER SUPPLY:	220 V single-phase with earth
PNEUMATIC POWER SUPPLY:	compressed air 6-7 bar
POWER CONSUMPTION:	electric = 2.5 kW
DIMENSIONS (MM) :	L = 2950 / W = 2035 and W (cover open) = 2410 / H = 2225 and H (cover open) = 2760
WEIGHT:	800 kg

FLEXIPOINTS

For FB 5021 equipped with pistols CS 6-15:

Cassese 15 mm flexipoints in strips (length = 120 mm), in boxes of 83000 points.

Ref: 23274POIN (Black) . 1 strip = \pm 340 points.

OPTIONS

- Z12191: Type 25 flexipoint kit option = 4 x CS 6-25 pistols + program
- Z10374: 1 x CS 6-15 pistol unit / - Z10490: 1 x CS 6-25 pistol unit
- Cassese 25 mm flexipoints in strips (length = 107 mm), in boxes of 3000 points.
Ref: 2317225MM (gold) – 2317425MM (black). 1 strip = \pm 214 points
- Z 13093: 1pistol 4097C (U shaped staples) équipé.
- U shaped staples :
 - Z14014 (Box of 20000 wedges N3) 06MM - Z14015 (Box of 10000 wedges N3) 08MM
 - Z14016 (Box of 10000 wedges N3) 10MM - Z14017 (Box of 10000 wedges N3) 12MM
 - Z14018 (Box of 10000 wedges N3) 14MM
- Upstream: Belt conveyor to feed the frames.
- Downstream: Belt conveyor for transfer to shrink wrapping.
- Integrated modem for tele-maintenance.

GUARANTEE

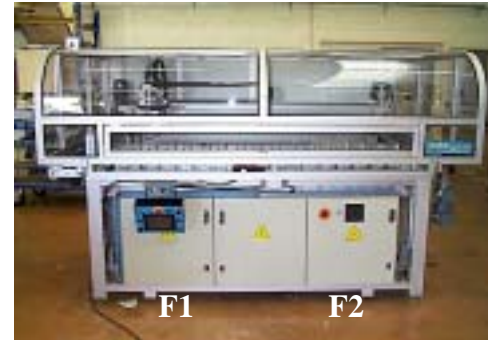
The FB 5021 is guaranteed for 1 year, parts and labour, against all manufacturing faults. Wearing parts and those damaged by usage not conforming to the provisions of this document shall be excluded from the guarantee.

UNPACKING AND PREPARATIONS FOR PUTTING INTO SERVICE

A) UNPACKING



Remove the top of the solid box, then remove battens P1 and P2. Remove the 2 sides then battens P3, P4, P5 and P6.



Once battens P8 and P7 have been removed, remove the machine's plastic protection.

Move the machine off its base using a lift-truck. The forks must be positioned between points F1 and F2 under the machine.

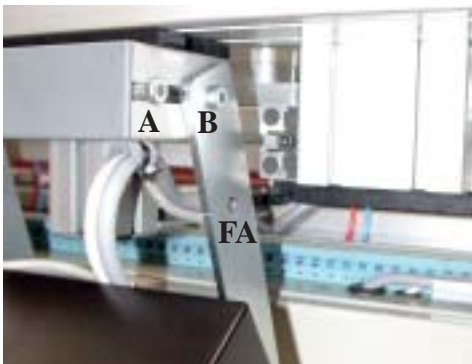
B) ASSEMBLING THE LUMINOUS COLUMN



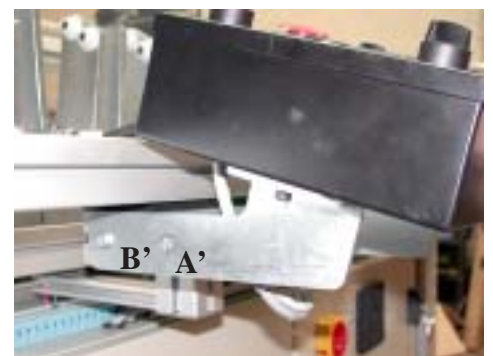
A mounting plate is fitted on the foot of the column. The column is placed on the top left front corner of the machine cover. Retrieve the 2 bolts at this location and mount the luminous column using a 5 mm Allen key.



C) INSTALLING THE CONTROL PANEL



Remove bolts A and A' with a 5 mm Allen key. After unfastening bolts B and B', move the control panel up until holes FA and A are aligned. Secure the 2 arms in position with bolts A and A'. Retighten bolts B and B'.



D) RELEASING THE PISTOLS

The 16 pistols of the FB 5021 are in place on their stand and attached by a plastic retainer. Remove them using a cutting tool (e.g. cutting pliers).

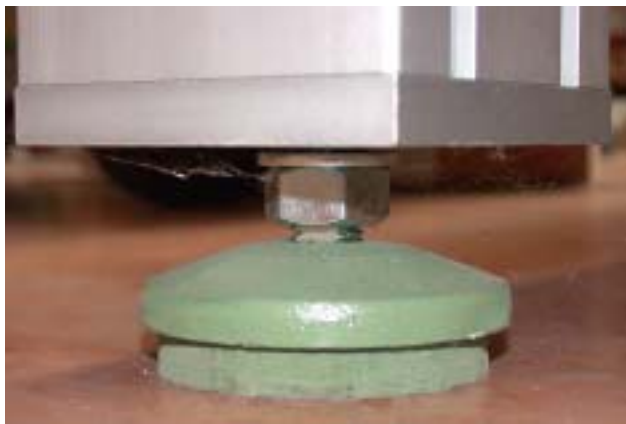
E) ELECTRIC / PNEUMATIC CONNECTION



- a) Open the left access door.
Connect the compressor outlet as indicated on page 5.



- b) Connect the FB 5021 to an electric socket, 220 V single-phase with earth.



F) LEVEL ON THE GROUND

Press the Emergency Stop button to prevent any movement. Turn on the electric power to the FB 5021 by turning the electric power supply button B (see page 6). Press on the home screen. In the MAIN menu press on SERVICES then on OPEN COVER.

Raise the cover of the FB5021. Check the level of the width and depth on the feed belt. Use the 4 height-adjustable feet to correct these levels, if necessary. To do this, unscrew nut A with a 24 mm wrench then raise or lower the machine by working on the bottom part of the threaded rod with a 12 mm wrench.

G) UNLOCKING THE FRAME GUIDANCE AND CLAMPING BARS

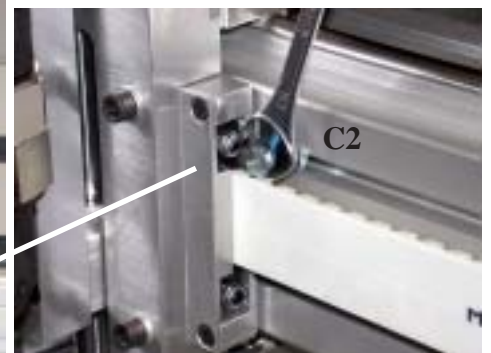
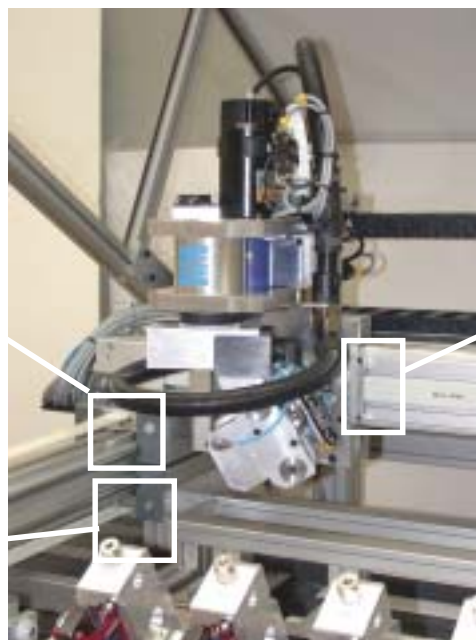
The frame guidance (axes Y / X) and clamping bars have all been locked by a bolt fitted in the groove of their movement shaft. After opening the cover, unfasten and remove these 3 bolts with a 10 mm wrench. The nut can be left captive in the profiled section.



Above: AXIS Y



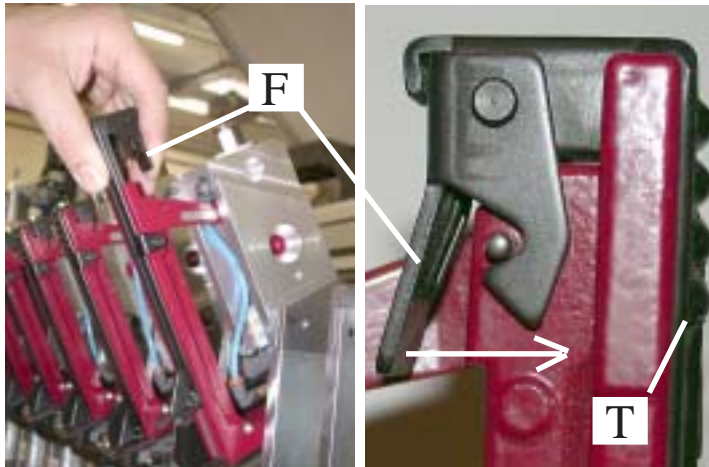
Below: FRAME CLAMPING SYSTEM



AXIS X

PUTTING INTO SERVICE

1) LOADING THE PISTOLS



Release slide T of the pistol by pressing on lever F and lifting up the assembly.

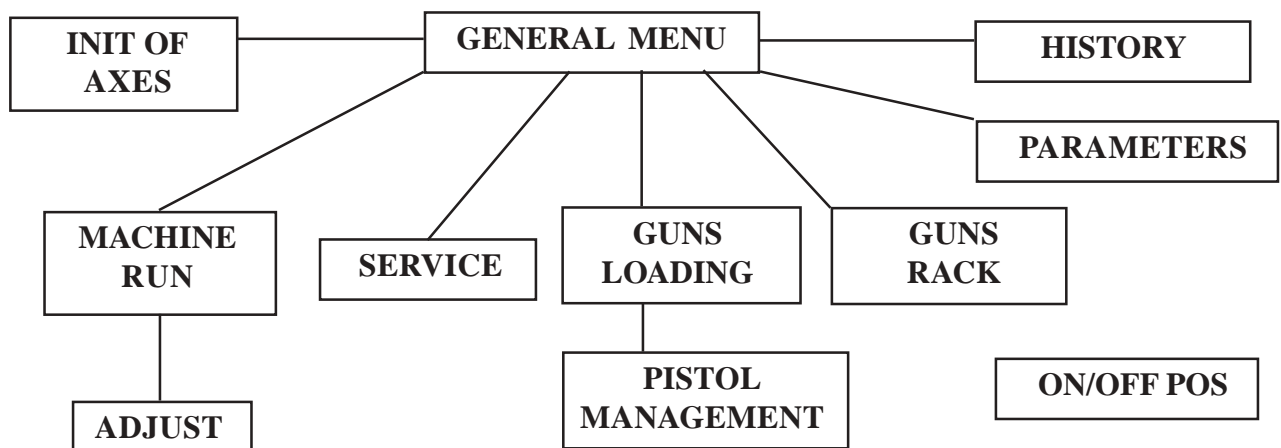


Insert the point strip (flat edge to the inside), then reclose the pistol by pressing on lever F to enable locking of the cartridge.



Follow the same procedure for the other pistols.

DIAGRAM OF FB 5021 PROGRAM



FB 5021 AIR LINE CONNECTION



USA

STANDARD

MALE CONNECTOR

FB 5021

Z 675



Z 675

QUICK RELEASE
FEMALE AIR
CONNECTOR



Z 749



US MALE
CONNECTOR

Z 701

STANDARD HOSE
CONNECTOR

Z 556



COMPRESSOR

STARTING UP

1) INITIALISATION OF THE AXES

Switch on the FB 5021 by turning the electric power supply knob B. Turn on the machine's air supply (see page 2).



The touch screen is initialised and the home screen is displayed:



Press a finger on the screen and the MAIN MENU is displayed. Disengage the Emergency Stop (AU)*, if necessary, and press the **RESUME** button.

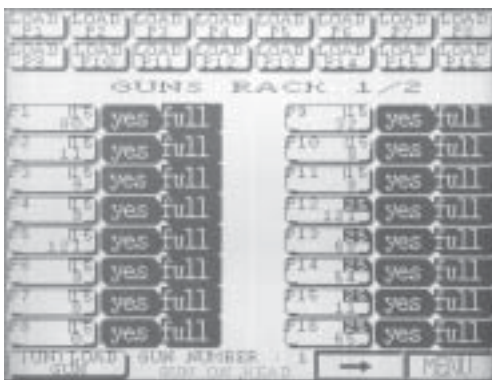
Initialisation of the axes is started.

Once finished, the flashing display “INITIALISATION NOT DONE” disappears.

*If the emergency stop is not engaged, initialisation of the axes starts automatically.

2) ACTIVE PISTOL

In the GENERAL MENU press GUNS RACK.



This screen shows you the number of pistols present on the machine and the flexipoint loading status of each one.

Each pistol has a number inscribed under its clamp.

After each reload, you must press the EMPTY key corresponding to the pistol. The key will then indicate: FULL

This screen also indicates to you the presence of a pistol on the head:

- CURRENT GUN: number of active pistol.

- GUN PRESENT: indicates that the pistol is on the head

IMPORTANT:

a) If the FB 5021 indicates the presence of a pistol on the head, and the

head is empty, the pistol must be put in place manually to avoid the risk of breakdown. Below is an example of how to proceed.

- Return to the MAIN MENU, then press SERVICE.
- Press OPEN COVER and raise the latter.
- If the present pistol is no. (X), hold it and press the key M(X), to open the clamp and remove it from its stand. Then press the OPEN CLAMP key to place the pistol no. (X) on the head. Press the OPEN CLAMP key again to reclose the head clamp.
- Reclose the cover and press again on OPEN COVER to lock it in place.



IMPORTANT: b) If the FB 5021 does not indicate the presence of a pistol on the head, but the head is carrying one, this pistol must be removed and replaced manually in its rack. An example of how to proceed is given below using (X) as the pistol number.



In the MAIN MENU press SERVICE, then OPEN COVER. Open the cover. Holding the pistol, press OPEN CLAMP, and retrieved it from the head.

Then press key M (X) to open the clamp on the rack corresponding to pistol (X).

Replace the pistol, then reclose the rack by pressing M(X) again.

Reclose the cover guiding the key into the safety lock.

Press OPEN COVER once again to lock it.

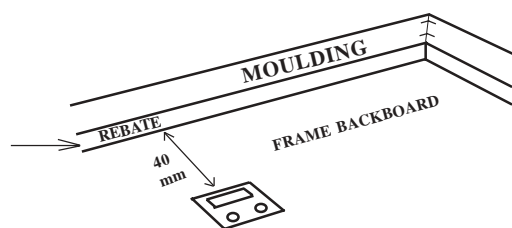
UTILISATION

1) LEARNING THE FRAME

Please note: The minimum free height in the rebate with the frame backboard = 2 mm.

Minimum distance of frame backboard hanger attachment = 40 mm

If the distance from the hanger attachment is less than 40 mm, learning can be done with a backboard with no attachment.



Press the NEW FORMAT button on the top left of the control panel. The clamping plate then withdraws to the outside and the belt begins to move.

Place **a single frame** face down on the belt (this is to ensure maximum clamping). When the frame reaches the stop plate, the belt stops and the clamping plate moves onto the frame.

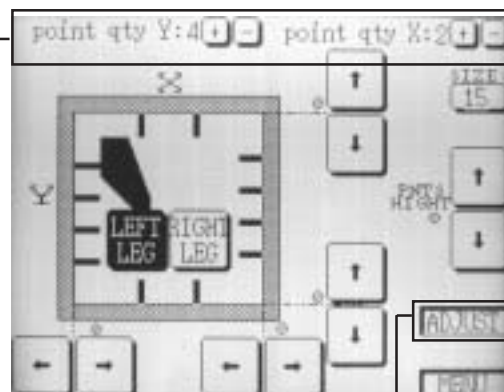
The head then passes over the inside sides of the frame to measure the dimensions.

At the end of the learning process, a display of the frame back is shown on screen with the number of flexipoints per side. The distance between 2 flexipoints can be changed (See page 9).



The number of flexipoints can be adjusted for each side **X and Y** using the + and - keys. The maximum number of points per side is 8.

N.B. Learning must be done whenever the type or size of frame changes.



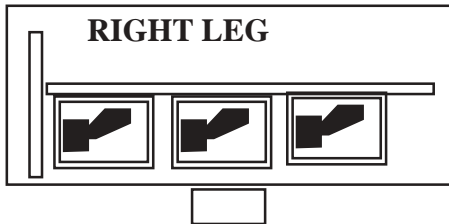
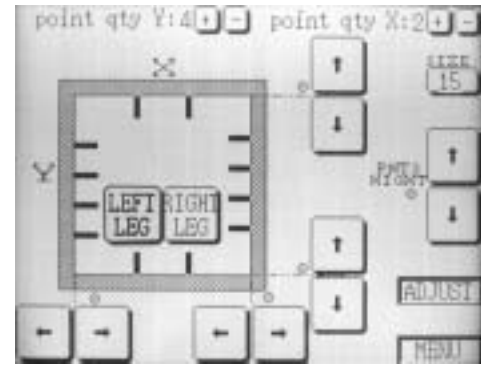
POINTS and FRAMES gives the frame count and number of points used for the current series. Press these keys to reset the counters to 0.

FRAME BACK WITH STRUT LEG

UNDER NO CIRCUMSTANCES MUST THE STRUT LEG PROJECT BEYOND THE OUTSIDE EDGES OF THE FRAME

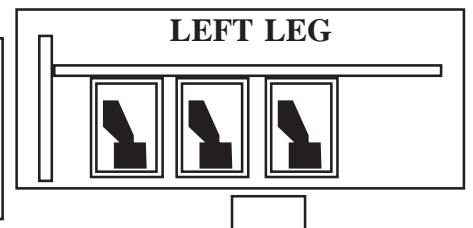
The Learning function for a frame with strut leg is operated as follows:

- Remove backboard with strut from frame
- Fit standard frame backboard of the same thickness.
- In the MACHINE RUN menu, specify left or right leg by pressing the corresponding key inside the frame.
- Place the frame on the conveyor belt.
- Initiate the learning operation, then remove the frame by turning the BELT PASSING button on the control panel.
- Refit the frame backboard with strut



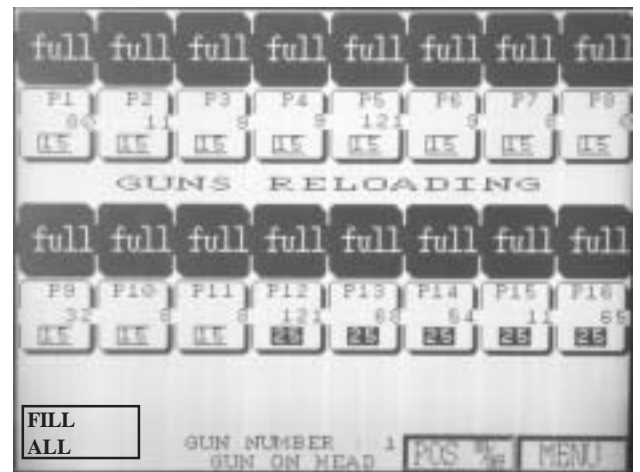
POSITIONS ON BELT

PAY ATTENTION TO THE DIRECTION OF POSITIONING ON THE BELT IN THE CASE OF BACKBOARDS WITH STRUTS. STRUTS MUST NEVER BE POINTING TOWARDS THE OPERATOR



2) EXECUTION

Press the **START** key on the control panel.



The FB 5021 immediately proceeds to fit flexipoints on the learning frame, then removes it towards the machine exit. The result can be checked at this point and corrections made, if necessary. Place the frames of this series upstream of the machine, on the conveyor belt. Frames can be coupled together. The belt stops when the first frame reaches the stop plate. The clamping plate flattens itself against the frame. The FB5021 then fits the flexipoints according to the parameters learnt during the Learning operation, then releases the frame towards the exit, whilst feeding the next frame.

When a series of frames is being executed, when the active pistol is empty, the machine deposits it in its stand. Then starting from the left, it loads the first pistol listed as FULL.

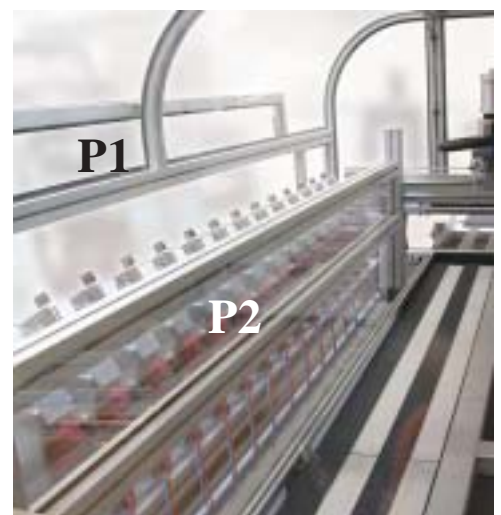
On the last pistol being taken, the machine emits 3 short beeps (luminous column = flashing orange). When all the pistols are empty, the machine emits 1 long beep (luminous column = standing orange).

To reload the pistols during production:

Open the front panel (P1) and fit a strip of points in the pistol(s) (see page 4), then on the MAIN MENU, press GUNS LOADING. Confirm that the pistol(s) is(are) FULL by pressing the EMPTY key corresponding to the pistol number. (If all 15 or 25 mm pistols have been reloaded, use the FILL ALL key).

SAFETY: When the FB5021 is in use:

- The cover cannot be open.
- If the front panel (P1) is opened by the operator, a panel (P2) located behind the pistol magazine positions itself so that access to the machine's working zone is prevented.



Using type 25 pistols (OPTION)

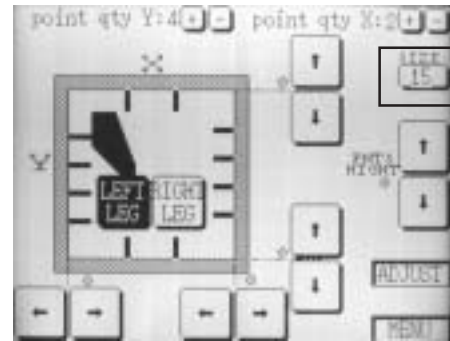
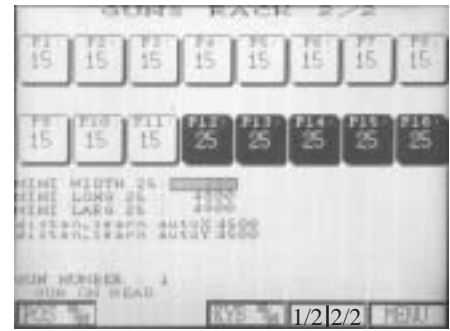
If you wish to use pistols with 25 mm points, they must first of all be specified as such.

In the GENERAL MENU / GUNS LOADING / GUN MANAGEMENT specify by pressing no. 15 or 25 on the key corresponding to the pistol. Then specify the characteristics of use of the 25 mm point:

- Minimum moulding width
- Minimum length,
- Minimum width
- Distance between points for X and Y. (The specified

dimensions are in encoder dots: 20 encoder dots translate into 1 mm). To enter these values, use the numeric keypad after pressing the KYB key.

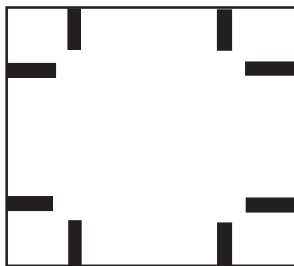
During a Learning operation, the machine determines whether the conditions have been met and selects point 15 or 25. This selection can nevertheless be changed by pressing the key 15/25 in the EXECUTION screen.



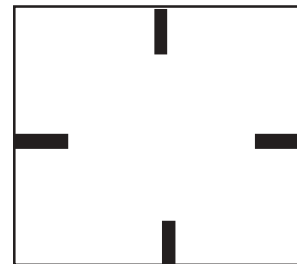
15
or
25

POINT FITTING MODE: 0 or 1.

Point fitting mode is selected automatically when the machine learns the frame. If one of the length or width dimensions is less than 15 cm, mode 0 is selected. If the length and width dimensions are at least equal to 15 cm, Mode 1 will be initiated. This mode enables the points to be placed as near as possible to the angles. Therefore mode 1 necessitates a minimum of 2 points per side.



MODE 1

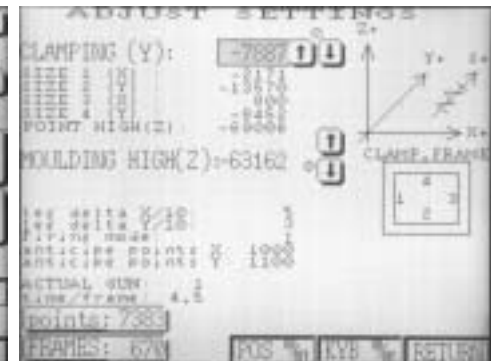
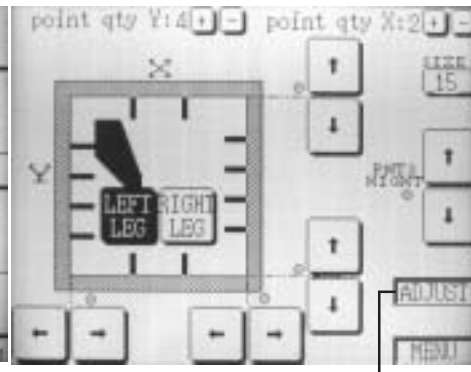
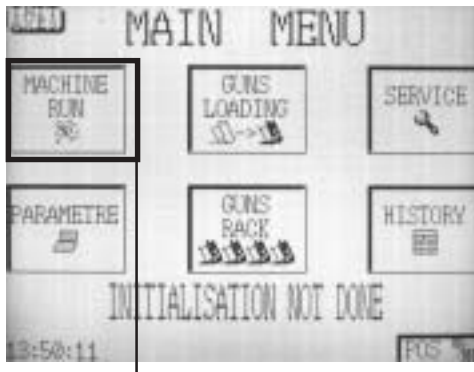


MODE 0

STRUT DIMENSIONS: The X and Y dimension of the strut can be adjusted to enable the point to be fitted as closely as possible to the strut.

The setting for each strut can be changed via the numeric keypad. There are 3 possible strut sizes.

To do this, on the MAIN MENU press the MACHINE RUN key then ADJUST SETTINGS.



In each screen where a numerical value can be changed (ADJUST SETTINGS, MACHINE RUN etc.) press the “KYB on/off” key to have the numeric keypad displayed / removed. Then move the cursor to the value in question by pressing the ←, →, ↑, and ↓ keys. Change this value using the numeric keypad and confirm by pressing the ↵ key.

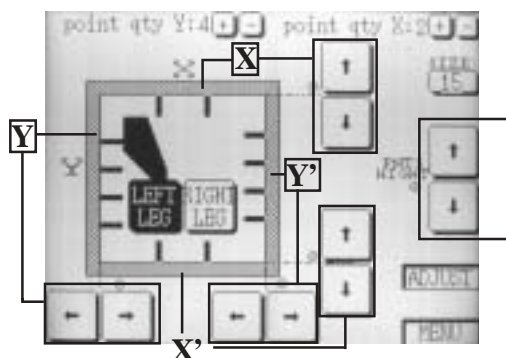
If necessary, the position of the keypad can be changed by pressing the  key, if the value to be changed is under it.

VARIATIONS IN FRAME DIMENSIONS

Variations in dimensions may occur in your frame series, especially when moving from one batch of mouldings to another. This can cause differences in the penetration depth of the flexipoints.

There are 2 possible solutions:

- Perform a LEARNING operation for the new series.
- Adjust the dimensions manually in the MACHINE RUN screen, using the keys marked with an arrow.

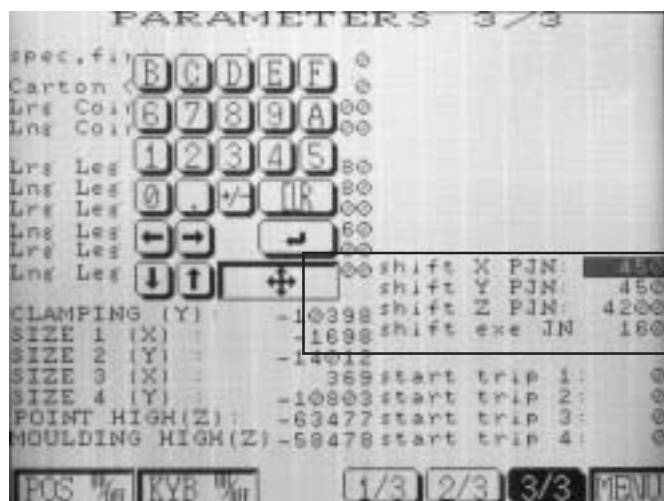


Adjusting the dimension of the positioning height of the points in the rebate. The positioning can be adjusted by a maximum of + or - 3 mm, in increments of 0.2 mm.

For X', X, Y and Y' the maximum adjustment is 2.5 mm, in increments of 0.5 mm.

Using type U shaped staples pistols (OPTION)

1) PARAMETERS



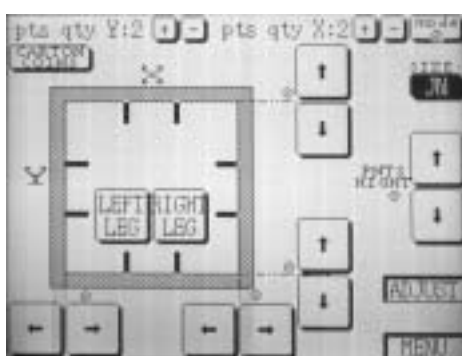
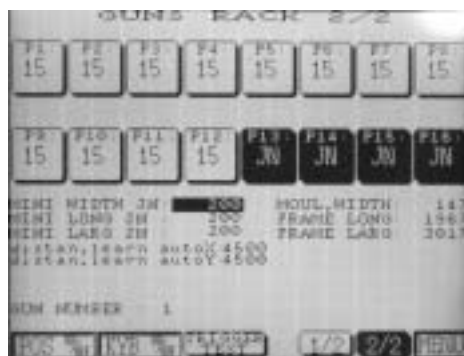
From the MAIN MENU, go to SERVICES, then to the 3rd page of parameters with key 3/3. Using of JN guns requires the following values :

- | | | |
|----------------|--------|---|
| - shift X PJN | : 450 | Reset all these values to 0 in order to be able to work with both 15mm & 25mm guns at the same time |
| - shift Y PJN | : 450 | |
| - shift Z PJN | : 4200 | |
| - shift exe JN | : 160 | |

RAPPEL: In each screen where a numerical value can be changed press the "KYB on/off" key to have the numeric keypad displayed / removed. Then move the cursor to the value in question by pressing the ←, →, ↑, and ↓ keys. Change this value using the numeric keypad and confirm by pressing the ↵ key. If necessary, the position of the keypad

can be changed by pressing the  key, if the value to be changed is under it.









2) USE



Use of the U-shaped staples is similar to the one of flexipoints 15mm & 25mm. Nevertheless, it is not possible to work with the 3 types of guns at the same time.

FB 5021 can only work in «Twin» mode : «15mm Flexipoints & U-shaped staples», or «25mm Flexipoints & U-shaped staples», or «15mm Flexipoints & 25mm Flexipoints», etc...

MEANING OF THE INDICATORS ON THE LUMINOUS COLUMN

	STANDING RED:	Emergency Stop
	BLINKING RED:	Initialisation of the axes not done
	STANDING BLUE:	Machine in operation
	BLINKING BLUE:	Learning underway
	STANDING WHITE:	Cover open
	STANDING ORANGE:	All pistols are empty
	BLINKING ORANGE:	There is only this 1 full pistol left
	STANDING GREEN:	Power normal

MEANING OF THE SOUND ALARMS

1 LONG BEEP
ALL PISTOLS ARE EMPTY

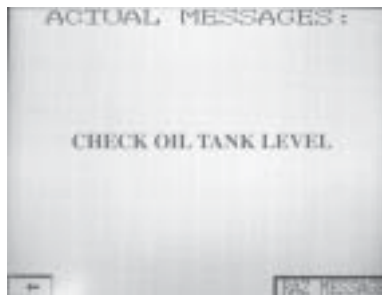
3 BEEPS
ONLY ONE FULL PISTOL LEFT

3 REPEATED BEEPS
FAULT DURING INSERTION OF THE
FLEXIPOINTS (see here below)

FAULT DURING INSERTION OF THE FLEXIPOINTS

If when a frame is being executed, the pistol shoots a flexipoint in a hole in the moulding, the point cannot be detected. In that case, the head will change pistol and then reposition itself in front of the hole. After a third change of pistol in front of the same hole. The machine will switch in pause mode and make a serial of 3 repeated beeps. To avoid another change of pistol or to resume after the pause mode, press the **CANCEL POINT DETECTION** button on the control panel.

MAINTENANCE: PISTOL LUBRICATION



A warning message will be displayed every million pistol trigger strokes asking you to check the level of the oil remaining in the lubricator (bottom left of the machine). If the oil level is visible in one of the lubricator lights, fill the lubricator with oil ref. ISO FD22, then press RAZ MESSAGE.